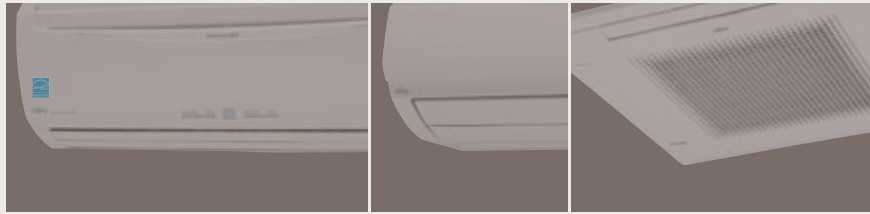


# THE FUJITSU Smarter



# Heat Pump guide

FREE  
GUIDE!

The Ultimate  
Home  
Improvement

How heat  
pumps work

Which type  
is best for  
your home

Buying tips

Brought to you by

FUJITSU

HEAT PUMPS

NEW ZEALAND'S FAVOURITE AIR™



COOLworld  
Industry Awards 2008

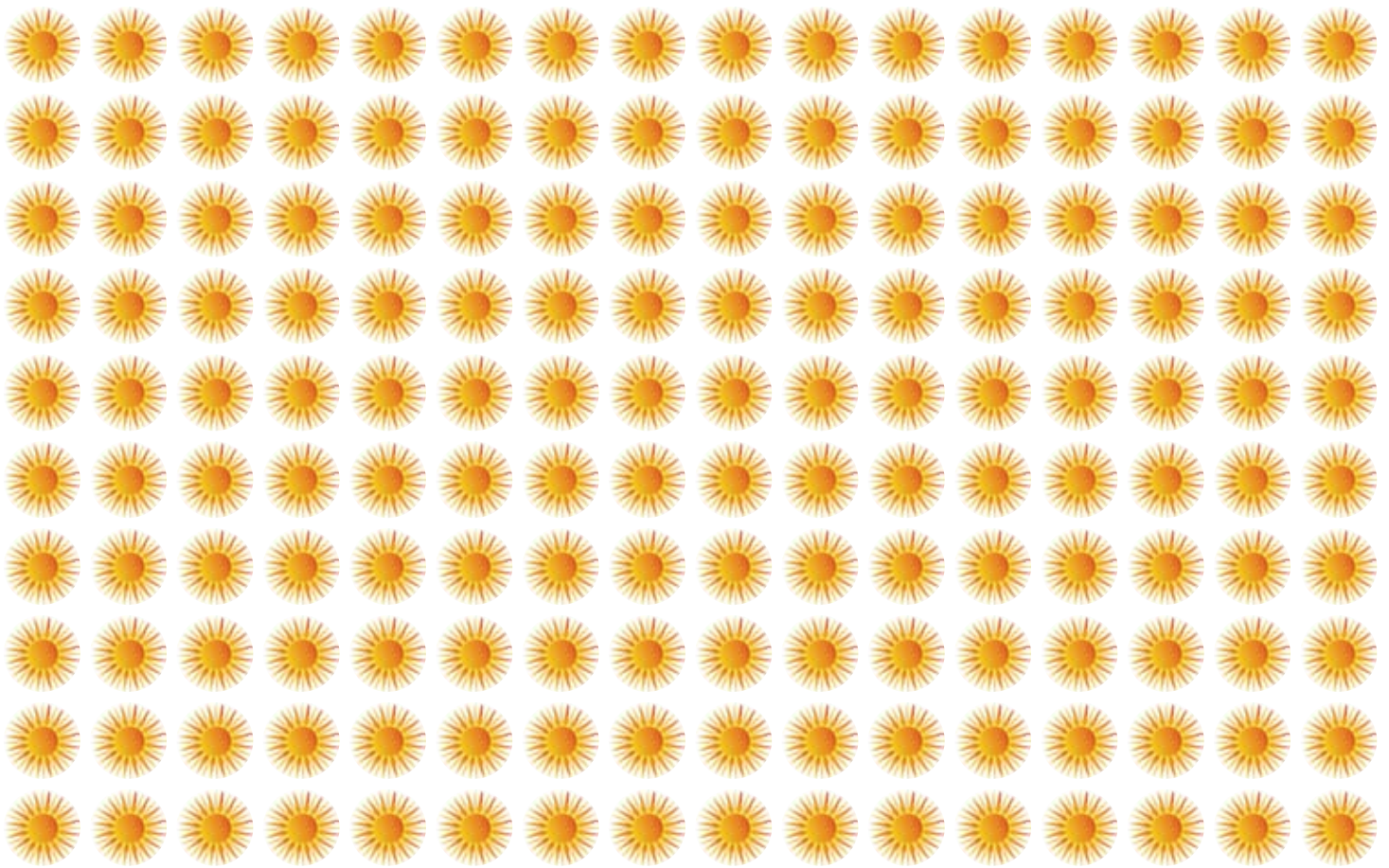
Most Efficient  
Air Conditioning  
Unit

Public Award

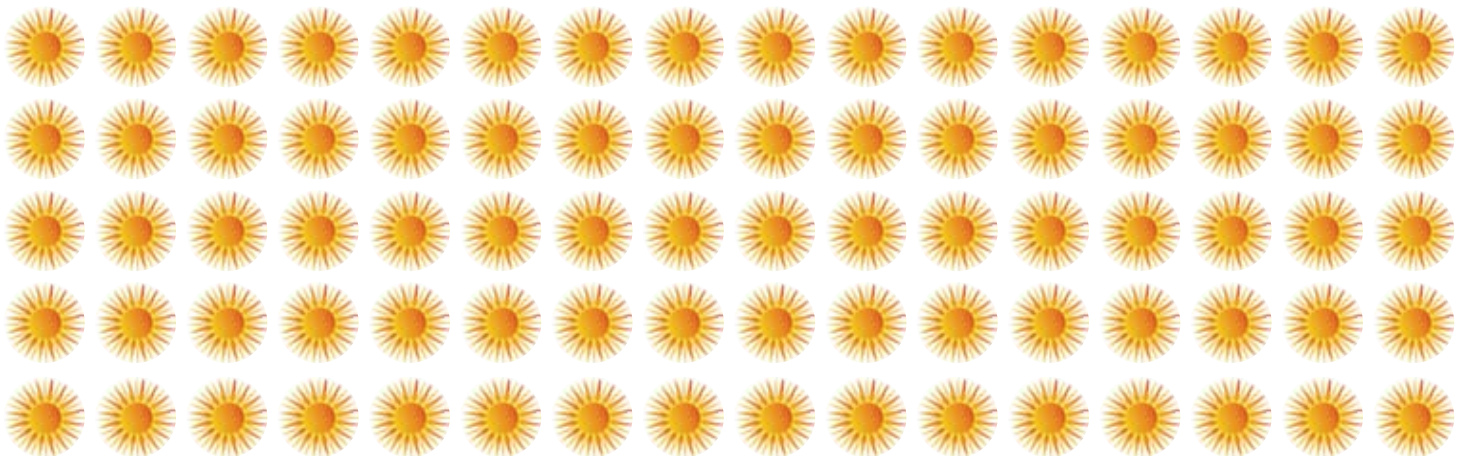
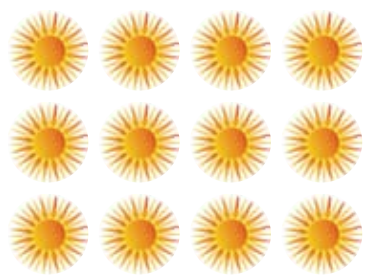
2008 WINNER

"Most efficient  
heat pump air  
conditioner"

©C&H



An ENERGY STAR<sup>®</sup> qualified heat pump takes \$1 worth of energy and gives you the comfort of up to \$4.50 worth of heat.



Compare this to less energy-efficient heat pumps that give \$2.50 worth of heat for every \$1, and it's easy to see how you can save up to \$150 a year off your power bill.

ENERGY STAR qualified heat pumps guarantee the most energy-efficient form of home heating, leaving you to rest assured you are warming your home, not the globe.

Download the action sheet 'How to choose a heat pump' from [www.energywise.govt.nz](http://www.energywise.govt.nz) and see how you can save money and energy by using a heat pump smartly.



# Welcome to

## Fujitsu's Smarter Heat Pump Guide



“ Heat pumps are one of the most efficient heating methods available in New Zealand, and can heat a Kiwi home for a fraction of the cost of running electric or gas heaters. They are also an air conditioner, a great bonus in summer heat and humidity!

As well as delivering savings to your pocket, heat pumps benefit the environment. Those benefits start at home where filters mean some heat pumps clean the air to remove

pollens and dust as well as create the warmth you need to enjoy your relaxed lifestyle.

Our Government and many Local Councils are actively encouraging the purchase of heat pumps over other forms of heating, to counter environmental problems (especially from the “exhaust” of fuel heating), and to help fight against climate change by simply using less energy than other heaters.

This guide explains how heat pumps deliver these savings and environmental benefits, and helps you understand how to choose the model that suits you best.

We hope you choose a Fujitsu – we’ve certainly got an enormous range of the most innovative heat pumps for you to choose from – but most of all we hope you embrace this clean, green, efficient heating for the benefits it offers to you, and New Zealand! ”

Stephen Fleming

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Enjoy effortless comfort as you save on heating.

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### 8 Ducting – the ultimate heating option

Discover ducting, the stylish way to make a heat pump an all-but-invisible part of your décor.

### 10 Buying Tips

Key tips to help you buy the perfect heat pump for your needs.

## The Smarter Heat Pump Guide

Brought to you by Fujitsu General New Zealand Limited  
[www.fujitsugeneral.co.nz](http://www.fujitsugeneral.co.nz)



# Fujitsu Comfort: the ultimate home improvement

## Effortless comfort

Let's face it. Home is where you want to relax and put your comfort first. So what better home improvement than perfect year-round temperature – whether it's a bitterly cold Kiwi winter's night, or a hot, humid summer's day.

Heat pumps are a miracle of modern engineering. They trap warmth from outside, and bring it into your home – at incredibly low cost. No heating element required! In the summer,

you just reverse the process with the push of a button, and they will cool and dehumidify your home.

## Why it feels more comfortable

Heat pumps deliver warm air into your home – and you choose the temperature you are most comfortable with. You will enjoy constant warmth that gently circulates throughout the room, or depending upon model, your whole house. No need to rearrange your furniture (and yourself) around the fire;

you will have the freedom to dress how you want, and relax where you want in effortless comfort. Now, that must be the ultimate home improvement.

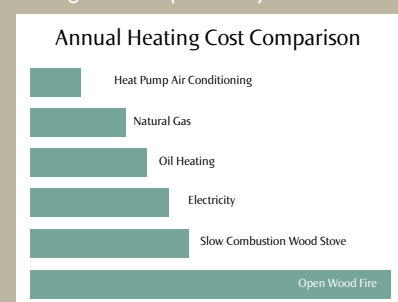
**Today's new generation heat pumps are more energy efficient, quieter and provide more lifestyle features than ever before.**

## Why Heat pumps really save your heating bill

The amazing benefit of heat pumps are that they have no heating element (see 'How heat pumps work' – opposite). All other forms of heating – gas, electricity, oil and open fires – burn energy to create heat, with various degrees of efficiency. The only electricity that heat pumps consume is the limited amount needed to drive the heat transfer process, which redistributes the warm air. To gain maximum savings – check the

Energy Rating of the brand you are considering – the higher the Star rating, the more efficient the model is. Fujitsu General Limited (FGL) invests enormous amounts of time and money on R&D every year to produce the models with unbeatable energy efficiency – often achieving maximum possible Energy Star ratings. This adds up to huge savings on your heating bill – which can be as high as 75% over traditional heaters.

More than saving you money, heat pumps have also been identified as an important tool to fight climate change and dependency on fossil fuels.



**Extra lifestyle features**

Fujitsu technology adds more than comfort to your home lifestyle.

It can add better air quality by absorbing fine dust and pollen, invisible mould spores and harmful micro-organisms – a huge bonus for asthma sufferers. Some models contain filters that absorb unpleasant household odours too, like kitchen and pet smells, whilst other models even have self-cleaning filters.



**Not all heat pumps are created equal**

Whichever Fujitsu model you choose, you can be assured that you are choosing the best available in efficiency and quietness. You can check the efficiency ratings and dB (decibel) levels of all Fujitsu models in the brochures at our website ([fujitsugeneral.co.nz](http://fujitsugeneral.co.nz)) – and you will see how amazingly quiet they are to operate (often quieter than the softest whisper). You will also see that Fujitsu has a huge range of Energy Star rated products. That means they will save you a lot on your heating bill, as well as helping you do your bit for the environment. □

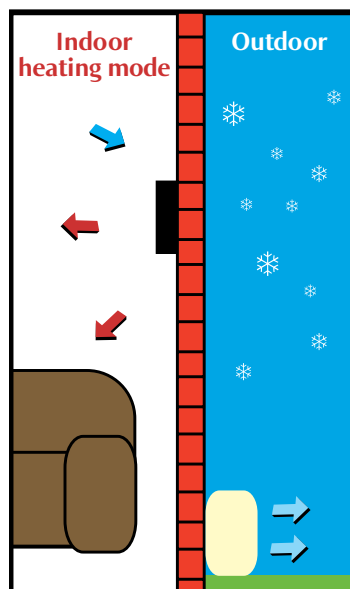
**ENERGY SAVING TIP**

Insulate your home. Keep warmer in winter (and cooler in summer) by installing wall and ceiling insulation. A well-insulated home can be up to seven degrees warmer in winter.

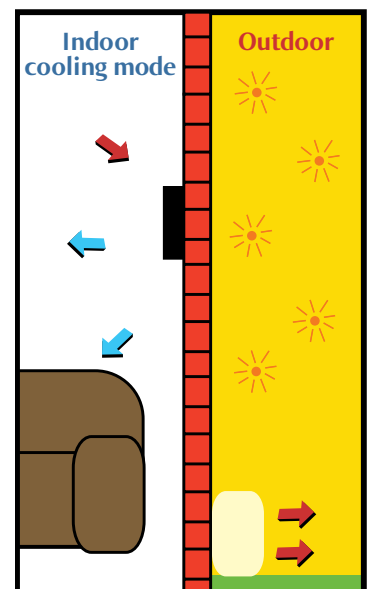
# How heat pumps work

Heat pumps simply transfer free heat (not air) from one place to another, just like your refrigerator does. The heat that rises from the back of your fridge is coming from inside it. An evaporator coil extracts warmth from the air inside, and transfers it out into your kitchen through the condenser coil in the back. Heat pumps work in the same way. Two coils, one inside your home and one outside, are linked

to draw warmth from the outside air (even on a cold Kiwi winter's night) and transfer it into your home. That's a major advantage over electric or gas heaters, as heat pumps have no heating elements to burn energy. Then, at the push of a button, your heat pump can run in reverse, acting as an air conditioner to pump heat out of your home – reducing humidity and keeping it fresh and cool in summer.



**In Winter**  
Even on the coolest day your heat pump traps heat from outside, compresses it and transfers it into your home. Fujitsu heat pumps still provide heat even when it is -15°C outside.



**In Summer**  
Switch onto cool, and the heat pump becomes an air conditioner – pumping heat and humidity out of your home, leaving it cool and very comfortable.

# How to choose a heat pump

Heat pumps can create the perfect environment for almost any home or office .

**H**eat pump technology is so advanced these days, that choosing the best type to suit your needs can be confusing.

So, to help simplify your decision, here's a checklist:

## **How many rooms do you want heated?**

You can buy a single heat pump to heat a single area or room, a 'multi-system' to heat 2, 3 or 4 areas, or a fully ducted system if you wish to heat your whole home.

## **Do you want to take advantage of the many 'extra' innovations that heat pumps offer?**

It is possible to buy Fujitsu heat pumps which offer the following innovations.

### **Whisper-quiet operation**

Fujitsu's improved fan design means that you simply cannot buy a quieter heat pump.

### **Ultimate energy-saving efficiency**

Fujitsu has a huge range of Energy Star rated products. That means lower running cost to you, as well as the assurance you are doing your bit for the global environment.

### **Plasma filters**

These reduce dust and dirt in the air, as well as absorbing unpleasant household odours like kitchen and pet smells.

### **Self-cleaning filters**

This is a Fujitsu world exclusive – an automatic filter that cleans itself, sterilises dirt and dust and therefore refreshes the air, as well saving energy wasted by dirty filters.

Other technology includes easy to use remote control, reverse cycle, sleep and digital timers, and moisture removal.

## **Which type of heat pump will suit you best?**

### **SPLIT SYSTEMS**

Nearly all heat pumps are split systems. That means they have an outdoor unit which contains the compressor, and an indoor unit which contains the fan that

circulates the warm air (or cooled air in the summer) in your home.

These units are designed to be discreet both in appearance and operation.

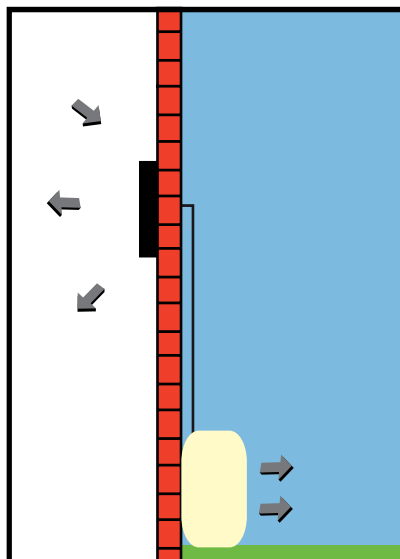
The outdoor unit contains the compressor, which is the busy part.

The indoor unit simply has a fan to circulate the warmed or cooled air as required. The indoor environment is then quieter, with the equipment arranged like this.

Choose the indoor type and model that suits you best.

### **Hi-Walls**

The most popular models. These slim, elegant and whisper-quiet indoor units are mounted unobtrusively on a wall. They



all offer advanced technology, including remote control, reverse cycle, sleep and digital timer, and moisture removal, and some offer additional features.

The Premier series offers whisper-quiet comfort, advanced Fujitsu energy efficiency, elegant looks, apple catechin filter (to absorb dust, mould spores and harmful micro-organisms), ion deodorising

filter (to absorb household odours). It is easy to operate and has many other Fujitsu benefits.

The Plasma series includes the Plasma Filter, advanced Fujitsu efficiency and all the latest technology of the Premier models.

### Ceiling Wall (Nocria)

These clever Nocria units are exclusive to Fujitsu, and are designed to sit very high on the wall, just below the ceiling and above eye-line, to remain



unobtrusive. Their large air flow makes them suitable for big volume areas. Perfect for high ceilings.

The revolutionary Nocria models contain the exclusive automatic filter cleaner and world-first fan technology. They are top energy savers, as well as being whisper-quiet, with all the features you need, such as remote control and timers.

### Compact Cassettes

A most discreet option, with only the grill showing in the ceiling. They provide heating and cooling in a range of capacities. Latest fan technology



distributes conditioned air through 3 or 4 sides, with adjustable directional louvers.

The Fujitsu compact cassette is unobtrusive, yet efficient and very effective. They feature brilliant air flow to reach the whole room, built-in timers, remote control and (optional) wired wall controller with 7 day timer feature.

### Compact Floor Consoles

These floor-standing models are very compact, with a range of capacities, offering quiet, but powerful operation.



These consoles look like a conventional gas or night storage heater – but don't behave like one! The compact model is only 60cm high and 74cm wide. They are also super quiet and surprisingly efficient, offering you the full range of capacities, with many additional features.

### Multi Indoor

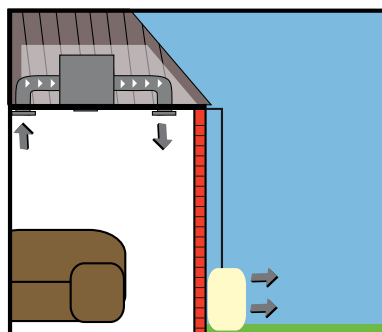
Just one outdoor unit can power up to four indoor units. The highly efficient, quiet way to heat or cool up to four different areas. The indoor unit selections are Hi-Wall, Console, Cassette or Bulkhead models to choose from. Making it easier to heat or air condition most domestic applications in New Zealand.

### Ducted Systems

These luxury systems heat or cool your whole home.

Air is distributed via insulated ducting connected to ceiling outlets. Ducting is the ultimate invisible solution for year-round comfort.

See the following pages for more details on Ducted heat pumps.



## Calculate your room's heating needs

When choosing a heat pump and indoor units, consider the size of each room you plan to include in your new heating and cooling system.

Size is important because indoor units have different capacities, measured in Watts. More Watts means more power and the ability to heat a larger room.

Adjust your assessment depending on whether or not each room is insulated, as the presence of insulation reduces the amount of heating and cooling power you need.

Other factors affecting the heat pump capacity required include window area (double glazed or not) and, of course, climate.

However, by simply multiplying the width (metres) x length (metres) of the room to be heated, the following table will give you an approximate idea of the heat pump capacity you will need. Your Fujitsu Accredited Installer is best qualified to help you choose the most efficient model size for your needs.

The area you want to heat	Heat Pump Capacity
15 to 25 m <sup>2</sup>	3,000 Watts
25 to 35 m <sup>2</sup>	4,000 Watts
30 to 40 m <sup>2</sup>	4,500 Watts
40 to 50 m <sup>2</sup>	5,500 Watts
45 to 55 m <sup>2</sup>	6,000 Watts
50 to 60 m <sup>2</sup>	6,500 Watts
55 to 65 m <sup>2</sup>	7,000 Watts
60 to 75 m <sup>2</sup>	8,000 Watts

m<sup>2</sup> Assumes ceiling height approx. 2.4m. Single storey dwelling, well insulated floors, walls, indoor design temp 20°C and outdoor ambient 7°C.



# DUCTING

## the ultimate heating solution

Heating your home should enhance comfort, and give you features that enhance your lifestyle, too.

### The Ultimate in Heat Pumps

Ducted heat pumps are surely the ultimate in comfort. The Fujitsu ducted models offer quiet, efficient operation, are easy to maintain, and operate via a wall mounted LCD controller that controls all functions of the system.

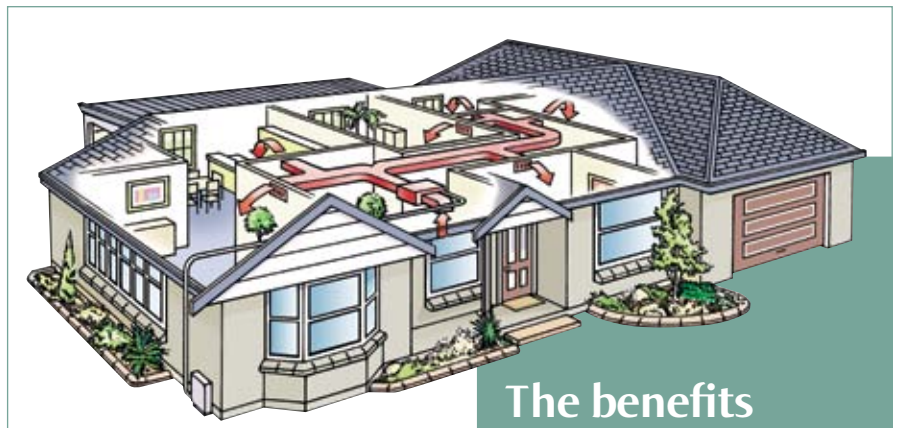
### Invisible comfort

Whatever the shape of the room, ducted units can create uniform temperatures throughout. The indoor unit is totally concealed, usually within a ceiling void.

Cool or warm air is then ducted into each room through outlets positioned in the ceiling. Easily controlled, Fujitsu's ducted systems provide comfort throughout your house without leaving cool or hot spots.

### Ducting away the worries

Ducting is a very simple technology that transfers the air from the indoor unit to the rooms you choose to duct in your home.



One heat pump on the outside of your home delivers free heat to the rooms in your home in winter, and cools and dehumidifies in summer.

### Features in Ducted Systems

Single phase ducted models are able to heat (or cool) several rooms, with features to make life a lot more comfortable and economical. With today's modern systems you can expect features such as weekly timers, auto

## The benefits of Ducted Heat Pumps

- Perfect comfort throughout the home
- Invisible and effortless
- Easy installation
- Warm in winter, cools and dehumidifies in summer
- Quiet operation
- Convenient LCD remote control
- Saves energy

changeover and temperature setback.

The Fujitsu Inverter Ducted system, uses the highly efficient R410A refrigerant which has zero ozone depletion properties, as it contains no chlorine, as well as offering superior energy savings.

### What's an Inverter?

Inverter systems are more economical to operate than conventional units. They can handle greater extremes in temperature, are smoother and more stable in operation and reach the desired temperature more quickly than conventional heat pumps.

### Accreditation Counts

Installation of any heat pump is not a do-it-yourself job. Fujitsu accredited installers give you the peace of mind of knowing that you will have a professionally finished job.

### Ducted Installers

These professionals are experienced in making ducted systems work in homes of all sizes. They know how to make sure ducted systems operate with scarcely a whisper, and they are past masters at getting ducts into the narrowest nooks so you'll never see the tools that make your home so comfortable. The final results? Heating and cooling that's a beautiful experience for the eyes and ears and a commonsense investment that will increase the value of your home. □



Ducting means that when you get up on a cold morning or come home on a hot, humid summer afternoon your house is just the right temperature!

### ENERGY-SAVING TIP

Don't overheat. Every one degree increase in temperature is a 10% increase in heating bills and emissions!



THE GLOBAL MARK OF ENERGY EFFICIENCY

# ENERGY STAR heat pumps – the smart choice

Congratulations to Fujitsu for the wide range of ENERGY STAR qualified heat pumps they have made available to New Zealanders, and for putting together this guide to help you make a well-informed choice.

Heat pumps are one of the most energy-efficient forms of heating available. A good one can give you around 4½ times the amount of heat for the same price as running a conventional heater.

But you only get the energy efficiency gains if you use your heat pump smartly – otherwise your power bill may not show much of a saving at all.

Ask your accredited Fujitsu installer to give you good advice tailored to your home. But in the meantime, here are some general tips to help you get the most out of your heat pump:

- Make sure your home is as well insulated as possible before you put your heat pump in - otherwise you could lose up to 75% of the heat you are paying for through your ceiling, walls and floor.
- Choose a heat pump that carries the blue ENERGY STAR mark – it tells you which are the most energy efficient available.
- Only heat the spaces that you are actually using, and shut doors and curtains to keep the heat in.
- Don't have the temperature higher than you need it. Aim for between 18°–22° Celsius while you are using a space and then 16° Celsius if you need it on overnight - otherwise, we recommend turning it off until the morning.
- Learn to use the timer features so your heat pump comes on an hour or so before you get home or get up in the morning, instead of leaving it on all day.
- Keep your heat pump well maintained, including making sure the filters are cleaned annually.

Enjoy the heat pump you choose – by using it smartly, you'll reap the rewards over the coming years.



Mike Underhill  
EECA Chief Executive



# Heat pump buying tips

A heat pump is an important purchase, so here are tips to help you choose the right one.

## Installation

Heat pumps **MUST** be sized and installed properly to work efficiently. It is therefore important to use an Accredited heat pump Installer. Check the Fujitsu website for an Accredited Installer in your area.

## Effective operation

More than anything else, you want your heat pump to be effective. In other words to heat (and cool in summer) quickly and efficiently. The greater the 'capacity' of a heat pump, the larger the area it can heat, the faster it works. There is a 'quick calculator' on page 7 of this guide to help you approximately calculate the capacity you will need. However, other factors such as where in New Zealand you live, and window areas, also make a difference. Again, your local Accredited 'Installer is the expert.

## Back-up and support

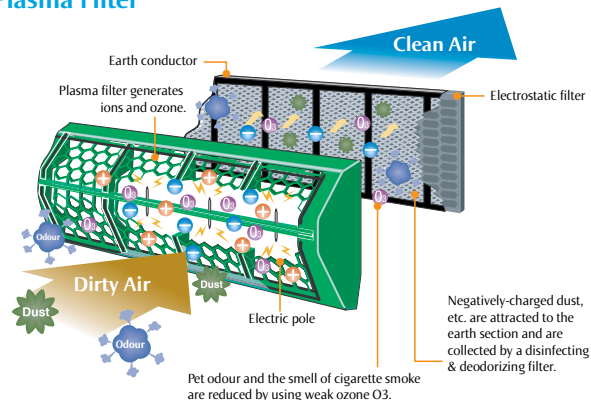
It is important that both the seller and the manufacturer are reliable and willing to support your heat pump into the future. Fujitsu New Zealand is totally managed by Kiwis – and accredit their installers, so you can be sure that they have the skills to deliver a superb installation, and be counted on for long term support.

## Maintenance

All heat pumps need to have the filters cleaned at regular intervals to maintain their efficiency. Check that this is simple to do on the model you choose. Many

models have easily removable filters that just need to be rinsed in soapy water. Fujitsu even has a model with a self-cleaning filter!

## Plasma Filter



## Lifestyle features

New technology heat pumps mean that they are simple to operate, with easy-to-use remote controls, timers if you want, and air filters that clean and deodorise your home. These filters are extremely effective in reducing dust, pollen and even mite carcasses from your home, and absorbing household odours such as pet and kitchen smells. One of the more recent advances is the introduction of a Plasma filter which uses an electrostatic filter and negatively charged ions to collect the finest dust and allergens (even mould spores), so that you have clean fresh air that is ideal for allergy and asthma sufferers.

## EXPLANATION OF TERMS

Most heat pump manufacturers publish a list of "specifications" for their models. Here is an explanation to help you

understand some of the more important terms.

**COP:** this stands for "Coefficient of Performance", and is an important measure of the efficiency of the model. Simply, it is the relationship between energy used and heat delivered at normal operation. For example, with a heating COP of

4.6 – you will get 4.6kW of heat for every 1kW of energy used. The higher the COP, the more you save!

**Energy Star rating label:** your quick guide to energy efficiency – more stars means more efficient.

**Heating range:** Your heat pump must be able to supply heat indoors, even when it's freezing outside. All Fujitsu models heat at -15°C.

**Indoor sound:** This is the sound (in decibels) that your heat pump makes from its fan inside. Quietness is no longer the problem it once was, as the technology has been improved so that you will barely be able to hear them, especially with those models that have 'quiet' mode.

If you have any other questions, please visit the Fujitsu website where you will find (under "where to buy") a Fujitsu Accredited Installer in your area. These installers will happily supply any information you need, without any obligation on your part.

# Energy saving tips

## How heat pumps benefit your home environment

**W**e already know that lower energy consumption means that heat pumps are economical and beneficial to New Zealand's environment. But there are other benefits inside your home too.

The air from many of today's modern heat pumps can also reduce dust, pollen and other airborne impurities to give you a healthier environment all round.

Unlike some other forms of heating, a heat pump does not consume oxygen, so rooms don't become stuffy.

When used for cooling they lower humidity by removing excess moisture.

Remember that there are no exposed hot surfaces, pilot flames, fuel burners or gas tanks to worry about.

Heat pumps are safe, economical and environmentally friendly: maintenance only entails cleaning the filter, no messy fire places to clean out and ash to dispose of.



## Around the home

### Kitchen

Old inefficient refrigerators can use 3 times the energy of the newer efficient ones. Choose an efficient refrigerator which is energy star rated. Make sure your fridge is located in a cool spot (e.g. away from the oven) and the seals are tight. Microwaves and electric frypans are much more efficient than the oven. Thaw frozen foods fully before cooking to save time and energy.

### Laundry

Use cold water in laundry whenever possible. Front-loading automatic washing machines use less energy

and water than top loaders. Never overload your automatic washing machine, as this reduces the cleaning action. If it's a sunny day, don't use the clothes dryer, but hang your washing on the clothesline. It will smell fresher too!

### Lighting

Choose energy-efficient, compact fluorescent globes. They last 6-10 times longer and use 80% less energy than standard globes. Don't leave outdoor security lights on all night or during the day – consider installing a timer or sensor.

## For your heat pump

Importantly, check the energy star rating of the unit you intend to buy. You can save up to 44 per cent\* on running costs by simply choosing a 5.5 star energy rated heat pump instead of a 3.5 star energy rated heat pump.

# 1

### Energy Efficiency

Choose an Accredited Heat Pump Installer who can also advise you on the running of the heat pump. A cheaper unit may cost you more in the long run.

# 2

### In Home Consultations

An Accredited Installer also understands your heating needs. For the best advice, have an expert visit and assess your requirements. Choosing the right sized unit for your home is one of the best ways to save energy and money.

# 3

### Best Operating Efficiency

Once an Accredited Installer has installed your unit, the most efficient settings are 20-22°C in winter and 22°C if you want to take advantage of your heat pump in summer. Also, make sure that your doors and windows are closed before you switch on your unit and consider switching it off if you leave the area for an extended period.

\*Savings calculated by comparing a Non-Inverter KFR-51GW/X1Dc (N++A) 5.1kW output with a max input of 1.94 kW and a Fujitsu ASTB18LD output with power input of 1.39 kW. Calculations based on both units operating for 8 hours per day of 155 heating days pa and 43 cooling days per annum. These figures are an estimate and take into consideration a saving of up 30 per cent for the inverter model. We accept no responsibility for the running costs of individual units. These calculations are a guide.



"Just jump on the Fujitsu website".

# The first place to visit when thinking heat pumps.

If you're thinking about buying a heat pump, visiting the Fujitsu General website can make choosing the right one easier. You'll find all the helpful information you need, plus see the huge range of Fujitsu heat pumps. It's easy to save money on heating and enjoy the luxury of year round comfort in your home. Start by jumping onto the Fujitsu General website!

 [www.fujitsugeneral.co.nz](http://www.fujitsugeneral.co.nz)



NEW ZEALAND'S FAVOURITE AIR™